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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/449,660	11/30/1999	JAMES WICHELMAN	10001186	6543

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AGILENT TECHNOLOGIES, INC.  
INTELLECTUAL PROPERTY ADMINISTRATION, LEGAL DEPT.  
P.O. BOX 7599  
M/S DL429  
LOVELAND, CO 80537-0599

EXAMINER
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VOLPER, THOMAS E

ART UNIT	PAPER NUMBER
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2665

13

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/449,660

Applicant(s)

WICHELMAN ET AL.

Examiner

Thomas Volper

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8, 10, 11, 13-16, 18 and 19 is/are rejected.
- 7) ☒ Claim(s) 4, 9, 12, 17 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicants' arguments filed 3 May 2004 have been fully considered but they are not persuasive.

In response to Applicants' arguments regarding claims 1 and 13, the Examiner respectfully disagrees. Applicants argue that the combination of the cited art, Chappell in view of Caporizzo and Chen et al., fails to show the feature of selecting among the different levels of test results to display on the display device. Applicants also argue there is no motivation to alter Chappell to enable this functionality. Chappell discloses that node level test results may be measured by a field client and sent to the headend, as described in the previous Office action. Chappell also discloses a signal comprised of multiple node level test results, composite signal ( $63_{N+1}$ ) (see Figure 2). The individual node level signals, as well as this composite signal, are fed into a test point switch (64). The output of the test point switch is sent to the headend for analysis. Chappell only expressly discloses performing the analysis on one of the individual node signals, as stated in the previous Office action. However, the invention of Chappell clearly shows the capability to perform analysis on any of the inputs of the test point switch (64) at the headend, as shown by Figure 2. This is sufficient disclosure to suggest that a combination of node level test results, i.e. group level test results, may be sent to the headend to be analyzed. The Chappell reference does not have to be altered to provide test results on different levels, since this capability is already demonstrated in Figure 2. It is also obvious to add an additional level of testing, i.e. channel level testing, to the invention of Chappell. The Chen reference

Art Unit: 2665

discloses performing testing on individual channels as described in the previous Office action. It is obvious to combine this feature because adding this channel level of testing further refines the analysis of communication between a headend and a node. All of the features of claims 1 and 13 of the present invention can be found in the combination of Chappell in view of Caporizzo and Chen et al., and there is sufficient motivation to combine the references.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chappell (US 6,425,132) in view of Caporizzo (US 5,874,992) and Chen et al. (US 6,032,019).

Regarding claims 1, 7 and 13, Chappell discloses a system and method of testing nodes in a CATV system. A field client (50<sub>x</sub>), which represents the interface system of the present invention, is coupled to the CATV distribution network. The field client receives upstream test results from a specified node and is able to graphically display several signal level measurements that enable a technician to view the reverse spectrum of the node (col. 5, line 62 – col. 6, line 29). The field client contains substantially the same circuitry as an ingress modem (60) (col. 9, lines 31-34), which includes a controller (100) that contains program memory and data memory (col. 6, lines 30-58). In order to obtain the test results, the field client must send a request to the headend to obtain and send the results for a specified node. As described (col. 4,

Art Unit: 2665

line 61 – col. 5, line 36; see also Figure 2), the test point switch (64) selects a particular input from a particular node to send to modem (60), which performs the actual spectrum measurements. Figure 2 clearly shows that signals  $63_1$ - $63_N$  from nodes  $32_1$ - $32_N$ , and a combined signal  $63_{N+1}$  are the inputs to test point switch (64). The composite upstream signal,  $63_{N+1}$ , represents a group of nodes transmitting upstream signals, and this composite signal is available to the modem (60). However, Chappell fails to expressly disclose using this composite signal to obtain spectrum measurements. Chappell also fails to expressly disclose displaying a number of channel parameters associated with a channel on one of the nodes. Caporizzo discloses a cable television communication network with means for diagnosing errors in the system. The invention calculates bit errors received by CATV settop terminals in order to isolate the source of errors. The cable system may utilize group results for isolating the source of errors (col. 1, line 64 – col. 2, line 10). Chen describes an iterative process of testing different path components for each frequency within a frequency range of a sub-band, which can be interpreted as a channel (col. 10, line 34 – col. 11, line 33). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to select the composite signal of Chappell for spectral analysis in the modem in order to obtain group level test results. At the time the invention was made, it also would have been obvious to a person of ordinary skill in the art to display test results for a channel on one of the nodes. One of ordinary skill in the art would have been motivated to obtain group level test results to identify a problem in a group of nodes in a specified area. One of ordinary skill in the art would have been motivated to obtain test results for a channel to narrow down the source of error in a particular node.

Art Unit: 2665

Regarding claim 2, Chappell discloses a node list, wherein for each node in the list, the modem (60) performs a reverse spectrum measurement. Each time a new node is tested it is added to the list (col. 9, lines 50-67).

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chappell (US 6,425,132) in view of Caporizzo (US 5,874,992) and Chen et al. (US 6,032,019) as applied to claims 1, 2, 7 and 13 above, and further in view of Schwartz (US 5,883,882).

Regarding claim 3, Chappell in view of Caporizzo and Chen provides all the limitations except a group total node power graph indicating a power range for a number of nodes. Schwartz discloses fault detection in a frequency duplexed system in which a detected power level is compared to an accepted range (col. 8, lines 12-17). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to display the detected power level of Schwartz and show the accepted range on the graphical display for the nodes in the list of Chappell. One of ordinary skill in the art would have been motivated to do this in order to in order to detect a fault of a node associated with the group.

5. Claims 5, 6, 8, 10, 11, 14-16, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chappell (US 6,425,132) in view of Caporizzo (US 5,874,992) and Chen et al. (US 6,032,019) as applied to claims 1, 2, 7 and 13 above, and further in view of Hsu et al. (US 6,483,814).

Regarding claims 5 and 14, Chappell in view of Caporizzo and Chen provides all of the limitations except that the channel plan graph indicates a desired frequency spectrum of one of

Art Unit: 2665

the nodes. Hsu discloses a graph that displays designated good channels, with associated frequency bands demonstrated by vertical lines, and their respective locations in a frequency spectrum (see Fig. 2). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to use this graph to display the desired frequency spectrum and channel locations therein of one of the nodes of the aforementioned teaching. One of ordinary skill in the art would have been motivated to do this because it would give a system technician a reference to compare to an actual frequency spectrum in order to assure that the system was operating within the correct spectrum.

Regarding claims 6 and 15, Chappell in view of Caporizzo and Chen provides all of the limitations except a graph indicating the total node power with respect to time. Hsu discloses a graph that measures power with respect to time (see Fig. 1). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to use this graph to display the total power of a node with respect to time. One of ordinary skill in the art would have been motivated to do this in order to track power fluctuations at a node to determine if a particular node is operating efficiently or if a problem, such as power dissipation, needs to be addressed.

Regarding claims 8, 10, 16 and 18, Chappell in view of Caporizzo and Chen provides all the limitations, including determining the carrier-to-noise ratio of frequencies within a sub-band (Chen: col. 10, 51-62), except a graph to display the carrier-to-noise ratio with respect to time for a channel. Hsu discloses a graph that displays power with respect to time (see Fig. 1). At the time the invention was made it would have been obvious to use the graph of Hsu to display the carrier-to-noise ratio measurement of Chen with respect to time of a sub-band, or channel, as an alternative to displaying power with respect to time, on the graphical display of Chappell. One

Art Unit: 2665

of ordinary skill in the art would have been motivated to do this to measure noise fluctuations of a particular channel to identify when noise renders a channel unusable.

Regarding claims 11 and 19, Chappell in view of Caporizzo and Chen provides all the limitations, including determining a signal-to-noise ratio at a certain power level of transmission for a particular frequency within a particular sub-band (Chen: col. 11, lines 20-33), except a channel power graph that indicates a magnitude of channel noise power with respect to time. The actual magnitude of the noise power is implicit in the signal-to-noise ratio because the power level of transmission is known. Hsu discloses a graph that displays power versus time (see Fig. 1). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to display the signal-to-noise ratio of Chen with respect to time on the graph of Hsu and provide this on the graphical display of Chappell. One of ordinary skill in the art would have been motivated to do this in order to determine when the noise power at a particular frequency became unacceptable and to switch to a different frequency.

#### *Allowable Subject Matter*

6. Claims 4, 9, 12, 17 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### *Conclusion*

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



Art Unit: 2665

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

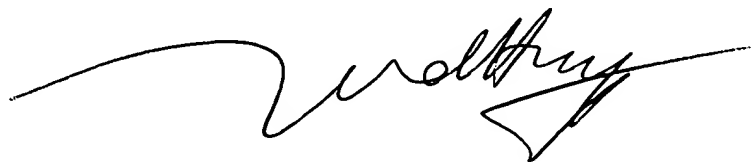
8. Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is 703-305-8405 and fax number is 703-746-9467. The examiner can normally be reached between 8:30am and 6:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached at 703-308-6602. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Thomas E. Volper



July 12, 2004



HUY D. VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600